

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the subject application.

Listing of Claims:

1. (Currently amended) A narrow band incoherent radiation emitter/detector comprising:
a planar filamental emission/detection element characterized by a predetermined spectral range of emitted/detected radiation and a emission/detection width of dl/l less than about 0.1, where l is the wavelength of said radiation, wherein said emission/detection width is substantially determined by surface features of said emission/detection element.
2. (original) An emitter/detector to claim 1 wherein said spectral range includes relatively long wavelengths and excludes relatively short wavelengths.
3. (original) An emitter/detector according to claim 2 wherein said emission/detection width is substantially determined by surface features of said emission/detection element.
4. (Cancel)
5. (original) An emitter/detector according to claim 1 wherein said spectral range is near an infrared absorption line of a predetermined material.

6. (original) An emitter/detector according to claim 5 wherein said emission/detection width is substantially determined by surface features of said emission/detection element.

7. (original) An emitter/detector according to claim 1 wherein said spectral range excludes relatively long wavelengths and relatively short wavelengths and includes a range of intermediate wavelengths therebetween.

8. (Cancel)

9. (Currently amended) An emitter/detector according to claim 8 7 wherein said range of intermediate wavelengths includes an infrared absorption line of a predetermined material.

10. (Currently amended) An emitter/detector according to claim 8 7, further comprising a thermal detector for photons characterized by a wavelength within said intermediate range.

11. (Currently amended) An emitter/detector according to claim 8 7 further comprising a thermal detector for detecting Infrared energy characterized by a wavelength in said intermediate range.

12. (Currently amended) An emitter/detector according to claim 8 7 wherein said emission/detection element is a suspended filament made of a metal foil.

13. (Currently amended) An emitter/detector according to claim 8 7 wherein said emission/detection element is suspended filament made of a back-etched semiconductor.

14. (Currently amended) An emitter/detector according to claim 8 7 wherein said emission/detection element is a resistive element having an emission surface to control said spectral range.

15. (Currently amended) A gas detector comprising:

A. a planar filamental emission/detection element characterized by a predetermined spectral range of emitted/detected radiation and a emission/detection width $d1/l$ less than about 0.1, where l is the wavelength of said radiation, wherein said emission/detection width is substantially determined by surface features of said emission/detection element, said emission/detection element having an input/output axis, and

B. a first reflector disposed along said input/output axis and opposite to said emission/detection element, whereby an optical path is defined from said emission/detection element to said first reflector to and back to said emission/detection element, wherein said optical path between said emission/detection element and said first reflector passes through a gas test region.

16. (original) A gas detector according to claim 15, further comprising:
 - C. a driver for driving said emission/detection element to emit radiation propagating along said optical path toward said first reflector.
17. (original) A gas detector according to claim 14 further comprising:
 - D. a processor responsive to said emission/detection element for generating an output signal representative of radiation incident thereon.
18. (original) A gas detector according to claim 15 wherein said spectral range includes a wavelength corresponding to an absorption line of a predetermined gas.
19. (original) A gas detector according to claim 15 further comprising:
 - a second reflector extending from points near said emission/detection element along said input/output axis,
 - wherein said second reflector is disposed along said optical path, whereby said optical path extends from said emission/detection element to said second reflector to said first reflector to said second reflector to said emission/detection element, and wherein said optical path between said second reflector and said first reflector passes through said gas test region.

20. (original) A gas detector according to claim 19, further comprising:

C. a driver for driving said emission/detection element to emit radiation propagating along said optical path toward said first reflector.

21. (original) A gas detector according to claim 20 further comprising:

D. a processor responsive to said emission/detection element for generating an output signal representative of radiation incident thereon.

22. (Previously presented) A gas detector according to claim 19 wherein said second reflector is a beam-forming reflector and said second reflector is substantially planar.

23. (Currently amended) A gas detector comprising:

A. a planar filamental emission element characterized by a predetermined spectral range of emitted radiation and an emission width dl/l less than about 0.1, where l is the wavelength of said emission element having an output axis, wherein said emission width is substantially determined by surface features of said emission/detection element,

B. a first reflector disposed along said output axis, and

C. a planar filamental detection element characterized by a predetermined spectral range of detected radiation and a an emission/detection width dl/l less than about 0.1, where l is the wavelength of said detection element having an input axis, whereby an optical path is defined from

said emission element to said first reflector and to said first detection element, wherein said optical path between said emission element and said first reflector, or between said first reflector and said detection element or both, passes through a gas test region.

24. (original) A gas detector according to claim 23 further comprising:
a second reflector disposed along said optical path between said first reflector and said detection element whereby said optical path extends from said emission element to said first reflector to said reflector to said detection element, and wherein said optical path between said first reflector and said second reflector passes through said gas test region.
25. (original) A gas detector according to claim 23, further comprising:
C. a driver for driving said emission element to emit radiation propagating along said optical path toward said first reflector.
26. (original) A gas detector according to claim 23 further comprising:
D. a processor responsive to said detection element for generating an output signal representative of radiation incident thereon.
27. (original) A gas detector according to claim 23 wherein said spectral range includes a wavelength corresponding to an absorption line of a predetermined gas.

28. (Currently amended) A multi-wavelength radiation emitter/detector array comprising:
an array of planar emission/detection elements, each element being characterized by a
predetermined spectral range of emitted/detected radiation and an emission/detection width $d\lambda/\lambda$ less
than about 0.1, when λ is the wavelength of said radiation, wherein each emission/detection width is
substantially determined by surface features of each respective emission/detection element.

29. (original) An array according to claim 28 wherein said array is adopted to emit/detect
information representative of a planar image.